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ABSTRACT

>> A SUPERBUBBLE SURROUNDING THE QUINTUPLLET AT THE GALACTIC CENTER?

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>> The QPS (Quintuplet, Pistol, Sickle) Region and the non-thermal filaments
>> in the Galactic Center have been a long-standing puzzle. Recently a
>> coherent picture has been assembled in which the extremely massive
>> Quintuplet stellar cluster (Figer et al. 1995, 1996) produces the
>> ionizing flux to create the G0.18-0.04 HII region (known to aficionados
>> as the "Sickle"), poised at the edge of the 25 km/s molecular cloud
>> (Serabyn & Guesten 1991). Some of the electrons in the ionized gas at
>> molecular cloud surfaces are then subject to acceleration to relativistic
>> energies by magnetic field line reconnection and as these particles
>> stream away from the site of acceleration along strong magnetic field
>> lines, they create the non-thermal filaments, or NTF's (Serabyn and
>> Morris 1994).

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>> But there may be more to the story than that. The Sickle neatly follows
>> the rim of a large (500" = 20 pc) circular ring which is faint but
>> distinct at 20cm and barely visible at 6 cm (Yusef-Zadeh and Morris 1987,
>> Figer 1996, Simpson 1996). Some early MSX (Midcourse Space Explorer)
>> results which are available on the WWW (MSX Celestial Background Team
>> 1996) clearly show this bubble at ~20um, and it is
>> faintly discernable in resolution-enhanced (HIRES) IRAS images at 12,
>> 25 and 60 microns. However, only in the MSX images
>> can this feature be clearly distinguished from other features and from
>> more diffuse emission. In the 6 cm image, the rim of this ring or bubble
>> located directly opposite from the Sickle feature also appears to show
>> some brightening where it is crossed by the nonthermal filaments.

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>> We present SWS01 speed 4 spectra of 3 positions around the ring. We detect
>> several Fe and Si lines at high signal to noise.

>> The 3 positions were chosen based on the 20 cm morphology of the region
>> and consist of 1 position where the "bubble" appears to be interacting
>> with the Sickle/NTF system, 1 position which appears relatively typical
>> and one off-source position at the center of the "bubble" which is
>> relatively free from structure in both the 20cm maps and the HIRES 25 um
>> and 60 um images.

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